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[54] **ELECTRO-OPTIC SLATE FOR DIRECT ENTRY AND DISPLAY AND/OR STORAGE OF HAND-ENTERED TEXTUAL AND GRAPHIC INFORMATION**

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178/19; 341/5; 341/33

[58] **Field of Search** ..... 340/706, 707, 712;  
178/18, 19; 341/5, 33

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[57] **ABSTRACT**

A portable interactive electro-optic data input/output, processing, storage, and display device responsive to hand printed text and hand drawn graphics. The device preferably comprises a combined flat panel display and input pen sensing surface constructed from non-mechanical, non-emissive display elements, such as liquid crystal display elements. The device also comprises an input pen for manual entry of hand printed text and hand drawn graphics, as well as commands, directly onto the display surface for providing an electronic writing and drawing slate. The display elements themselves are preferably utilized as input pen sense locations. The flat panel display and input pen sensing surface is constructed so that there is no display distortion when the input pen is in contact with the surface. Rapid input pen sensing is provided for accommodating natural pen movement on a high resolution, large area display. A character recognition method is also associated with the device for automatic and computationally efficient on-line recognition of hand printed text characters, while accommodating a natural printing style. Hand printed text characters are recognized and preferably stored in a compact and standardized format, such as ASCII, for later display, processing, or output to external equipment, such as a printer, plotter, or computer. Graphics can also be entered and stored for later display, processing, or output to an external device, and graphics can be interspersed with text, if desired. Also, text and graphics can preferably be input to the device from external information processing equipment for display and/or processing.

20 Claims, 43 Drawing Sheets

